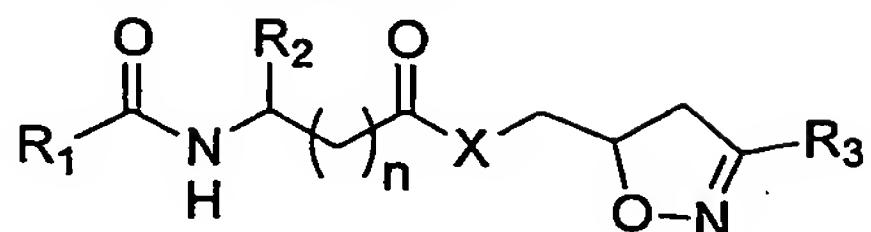


WHAT IS CLAIMED IS:

1. A tTGase inhibitor of the formula:



wherein R₁ and R₂ are independently selected from H, alkyl, alkenyl, cycloalkyl, aryl, 5 heteroalkyl, heteroaryl, alkoxy, alkylthio, arakyl, aralkenyl, halo, haloalkyl, haloalkoxy, heterocycl, and heterocyclalkyl groups, an amino acid, a peptide, a peptidomimetic, or a peptidic protecting group; wherein R₂ can additionally be selected from the group consisting of LPYPQPQLPY, LPFPQPQLPF-NH₂, LPYPQPQLP, LPYPQPQLPYPQPQPF, LP-X₂₋₁₅, where X₂₋₁₅ is a peptide consisting of any 2-15 amino acid residues followed by a C-terminal 10 proline; R₃ is selected from F, I, Cl, and Br; n is from 0 to 10; and X is selected from the group consisting of O and NH,

other than {(S)-1-[(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-carbamoyl]-2-phenylethyl}-carbamic acid benzyl ester.

15 2. The inhibitor of Claim 1, wherein R₁ is selected from the group consisting of
BnO, Me, Cbz, Fmoc, Boc, PQP, Ac-PQP, PQPQLPYPQP, Ac-PQPQLPFPQP,
QLQPFPQP, LQLQPFPQPLPYPQP, X₂₋₁₅-P, where X₂₋₁₅ is a peptide consisting of any 2-15
amino acid residues followed by a N-terminal proline.

20 3. The inhibitor of Claim 1, wherein R_2 is selected from the group consisting of (S)-Bn, (S)-CO₂Me, (S)-Me, (R)-Bn, (S)-CH₂CONHBn, (S)-(1*H*-inol-yl)-methyl, (S)-(4-hydroxy-phenyl)-methyl, OMe, O*t*Bu, Gly, Gly-NH₂, LPY, LPF-NH₂.

4. The inhibitor of Claim 1, wherein R_3 is Br.

25

5. The inhibitor of Claim 1, wherein said tTGase inhibitor is selected from the group consisting of:

{(S)-1-[(3-Bromo-4,5-dihydro-isoaxazol-5-ylmethyl)-carbamoyl]-2-phenyl-ethyl}-carbamic acid benzyl ester; (S)-2-Benzylloxycarbonylamino-4-[(3-bromo-4,5-dihydro-

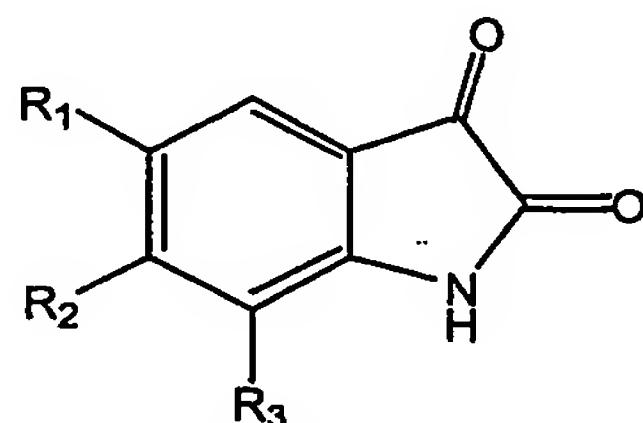
30 isoxazol-5-ylmethyl)-carbamoyl]-butyric acid methyl ester; (S)-2-Benzylloxycarbonylamino-N-(3-bromo-4,5-dihydro-isoxazol-5-ylmethyl)-succinamic acid methyl ester; (S)-2-

Benzylloxycarbonylamino-3-phenyl-propionic acid 3-bromo-4,5-dihydro-isoxazol-5-ylmethyl ester, {(S)-1-[(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-carbamoyl]-ethyl}-carbamic acid

benzyl ester; (S)-2-Acetylamino-N-(3-bromo-4,5-dihydro-isoxazol-5-ylmethyl)-3-phenyl-
35 propionamide; {(R)-1-[{(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-carbamoyl}-2-phenyl-

ethyl}-carbamic acid benzyl ester; {(S)-2-Benzylcarbamoyl-1-[(3-bromo-4,5-dihydro-isoxazol-5-ylmethyl)-carbamoyl]-ethyl}-carbamic acid benzyl ester; [(S)-1-[(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-carbamoyl]-2-(1H-indol-3-yl)-ethyl]-carbamic acid benzyl ester; {(S)-1-[(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-methyl-carbamoyl]-2-phenyl-ethyl}-carbamic acid benzyl ester; [(S)-1-[(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-methyl-carbamoyl]-2-(4-hydroxy-phenyl)-ethyl]-carbamic acid benzyl ester; 1-(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-3-(2-chloro-5-trifluoromethyl-phenyl)-urea; 1-(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-3-(4-chloro-2-trifluoromethyl-phenyl)-urea; 1-(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-3-(4-fluoro-phenyl)-urea; 1-(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-3-(2,5-dimethyl-phenyl)-urea; {(S)-1-[(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-carbamoyl]-2-(4-fluoro-phenyl)-ethyl}-carbamic acid benzyl ester; {(S)-1-[(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-carbamoyl]-2-(3-fluoro-phenyl)-ethyl}-carbamic acid benzyl ester; {(S)-1-[(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-carbamoyl]-2-(1H-indol-3-yl)-ethyl}-carbamic acid benzyl ester; {(S)-1-[(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-carbamoyl]-2-(5-hydroxy-1H-indol-3-yl)-ethyl}-carbamic acid benzyl ester; {(S)-1-[(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-carbamoyl]-2-(4-hydroxy-phenyl)-ethyl}-carbamic acid pyridin-4-ylmethyl ester; {(S)-1-[(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-carbamoyl]-2-(4-hydroxy-phenyl)-ethyl}-carbamic acid pyridin-3-ylmethyl ester; {(S)-1-[(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-carbamoyl]-2-(4-hydroxy-phenyl)-ethyl}-carbamic acid phenethyl ester; {(S)-1-[(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-carbamoyl]-2-(4-hydroxy-phenyl)-ethyl}-carbamic acid naphthalen-2-ylmethyl ester; {(S)-1-[(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-carbamoyl]-2-(4-hydroxy-phenyl)-ethyl}-carbamic acid 1,1-dioxo-1H-1λ₆-benzo[b]thiophen-2-ylmethyl ester; {(S)-1-[(3-Bromo-4,5-dihydro-isoxazol-5-ylmethyl)-carbamoyl]-2-(5-hydroxy-1H-indol-3-yl)-ethyl}-carbamic acid 1,1-dioxo-1H-1λ₆-benzo[b]thiophen-2-ylmethyl ester.

6. A tTGase inhibitor of the formula:



where R₁, R₂ and R₃ are independently selected from H, a halo group, alkyl, aryl, and NO₂.

7. The tTGase inhibitor of Claim 11, wherein said inhibitor is selected from the group consisting of:

2,3-Dioxo-2,3-dihydro-1H-indole-5-sulfonic acid propylamide; 2,3-Dioxo-2,3-dihydro-1H-indole-5-sulfonic acid benzylamide; (S)-1-(2,3-Dioxo-2,3-dihydro-1H-indole-5-sulfonyl)-pyrrolidine-2-carboxylic acid methyl ester; (S)-2-(2,3-Dioxo-2,3-dihydro-1H-indole-5-sulfonylamino)-3-phenyl-propionamide; (S)-N-(2-Dimethylamino-ethyl)-2-(2,3-dioxo-2,3-dihydro-1H-indole-5-sulfonyl amino)-3-phenyl-propionamide; 6-Bromo-7-methyl-1H-indole-2,3-dione; 7-Methyl-6-phenyl-1H-indole-2,3-dione

8. A formulation for use in treatment of Celiac Sprue and/or dermatitis herpetiformis, comprising:

10 an effective dose of the tTGase inhibitor according to any of claims 1-7 and a pharmaceutically acceptable excipient.

9. A method of treating Celiac Sprue and/or dermatitis herpetiformis, the method comprising:

15 administering to a patient an effective dose of a formulation according to Claim 8; wherein said tTGase inhibitor attenuates gluten toxicity in said patient

10. The method of Claim 9, wherein said formulation is administered with a glutenase.

20

11. The method according to Claim 9, wherein said formulation is administered orally.

12. The method according to Claim 9, wherein said formulation comprises an 25 enteric coating.